Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

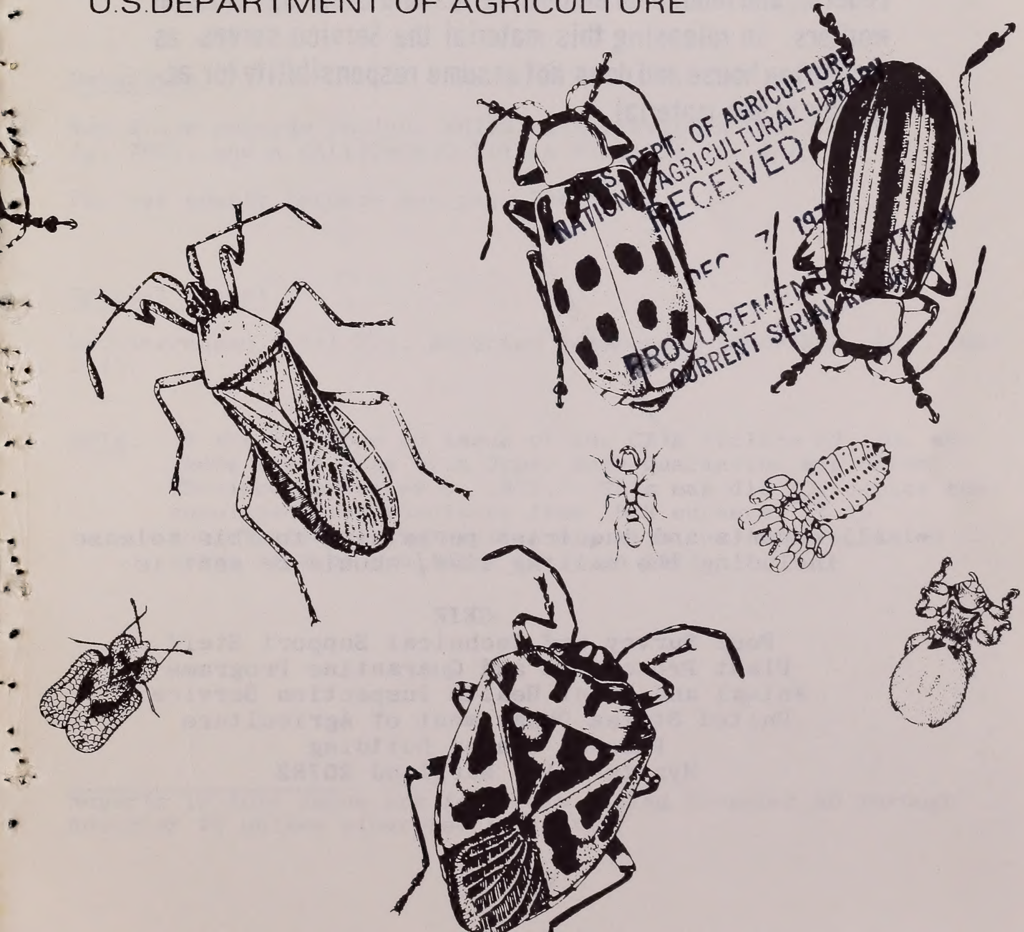
1.967
A2C78

VOL. 22 Nos. 46-48 November 1972

Cooperative Economic Insect Report

Issued by
PLANT PROTECTION AND QUARANTINE PROGRAMS
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
RECEIVED
DEC 7 1972
PROCUREMENT SECTION
CURRENT SERIAL RECORDS



ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
PEST SURVEY AND TECHNICAL SUPPORT STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

CEIR
Pest Survey and Technical Support Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

Volume 22 December 1, 1972 Numbers 46-48

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG damaged 3,000-4,000 acres of wheat in central Washington. (p. 761).

NANTUCKET PINE TIP MOTH unusually severe in pine plantations in eastern Virginia. (p. 763).

ORANGESTRIPED OAKWORM and a GEOMETRID MOTH heavily defoliated several thousand acres of forest in southern New Jersey. (p. 763).

Detection

New State records include WHITE PINE WEEVIL in California (p. 763), and a CALLIPHORID FLY in Virginia (p. 766).

For new county records see page 766.

Special Report

Mediterranean Fruit Fly. Selected References 1950-1955. (pp. 769-774).

NOTE: In the November 10 issue of the CEIR (Volume 22, No. 45) there was a copy of a Gypsy Moth Quarantine map dated, "Revised September 5, 1972." This map did NOT depict the regulated area resulting from 1972 surveys. It is anticipated the quarantine map with the 1972 regulated areas will be published early in 1973.

Reports in this issue are for weeks ending November 10 through November 24 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance....................761

Insects Affecting

Corn, Sorghum, Sugarcane....761
Small Grains................761
Forage Legumes..............761
Soybeans....................762
Cotton......................762
Deciduous Fruits and Nuts...762
Citrus......................763
Ornamentals.................763
Forest and Shade Trees......763
Man and Animals.............764
Households and Structures...764
Stored Products.............765

Beneficial Insects..765
Federal and State Plant Protection Programs.................765
Detection...766
Corrections...766
Hawaii Insect Report..767
Mediterranean Fruit Fly. Selected References 1950-1955.......769

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-NOVEMBER TO MID-DECEMBER 1972

The National Weather Service's 30-day outlook for mid-November to mid-December calls for temperatures to average below seasonal normals in the central and southern Plains, the middle Mississippi Valley and California. Above normal temperatures are indicated for the Great Lakes region, the Northeast, Florida, and the northern intermountain region. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal in the eastern half of the Nation and west of the Divide except for near normal amounts over the southern Plateau region. Subnormal precipitation is expected to be limited to the Rio Grande Valley. In unspecified areas near normal totals are expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING NOVEMBER 27

Reprinted from weekly Weather and Crop Bulletin supplied by environmental Data Service, NOAA.

PRECIPITATION: The week began with clouds covering much of the Nation. The main exceptions were an area from California across the southern Rocky Mountains to the western edge of Texas, a small portion of the middle Mississippi River Valley, and extreme southern Florida. Fog was widespread early Monday from the northern portion of the Great Basin to the upper and middle Mississippi River Valley, and from Lower Michigan to the Tennessee River Valley. A vigorous storm centered off the northern Atlantic coast continued to produce heavy rain along the coast and snow in northeastern New York and northern New England. New York City received more rain this month than any previous November and more rain in 1972 than in any previous calendar year. Weather of the week continued on page 768.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - ARKANSAS - Survey negative in Washington County week ending November 17. (Boyer). OKLAHOMA - Averaged less than 1 per linear foot in ungrazed wheat in El Reno area, Canadian County. None found in ungrazed field near Chickasha, Grady County, week ending November 17. (Okla. Coop. Sur.). KANSAS - Economic in one wheat field; averaged 250 per drill row foot in 5-inch wheat in northern Finney County. Less than 1 percent dead leaves seen. Some treating reported in Wichita County, primarily confined to southern part. (Bell). NEBRASKA - Ranged 20-65 per linear row foot in early planted small grain fields in Osceola and Stromburg area of Polk County. Some fields destroyed, others showed minor damage. Several fields treated in October showed good control. (Keith). SOUTH DAKOTA - Continued to damage winter wheat near Kennebec, Lyman County, and other winter wheat fields in spite of accumulated snowfall of 4-8 inches October 30 and November 2. During period November 3-10, temperatures in 40's and 50's in wheat areas in western part of State. Coccinellidae also active in these fields. (Jones). WASHINGTON - Damaged 3,000-4,000 acres of wheat at Wilson Creek, Grant County, as of November 10. Ranged 500-1,000 per plant; some young plants almost destroyed. (Foeppel, Retan).

CORN LEAF APHID (Rhopalosiphum maidis) - KANSAS - Trace in some wheat in Finney, Haskell, Seward, and Meade Counties. None seen in Scott, Greeley, Wichita, Gray, Stanton, and Stevens Counties. (Bell).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Sorghum field south of Peoria, Maricopa County, almost total loss week ending November 17. (Shields).

SMALL GRAINS

APPLE GRAIN APHID (Rhopalosiphum fitchii) - KANSAS - Moderate to heavy on lower stems of wheat in some fields in west-central and southwest districts. Heaviest infestation 700 per row foot in northern Finney County field. (Bell).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - INDIANA - Oviposition in alfalfa unusually light over most of State. Egg counts per square foot by county: Knox zero, Harrison 13, Steuben 13, La Porte (study fields) 76. (Wilson, Armbrust). KENTUCKY - Eggs averaged 22 and 1.4 per square foot at 2 locations in Fayette County. Larvae averaged 0.1 per square foot at one location. (Barnett, Parr). TEXAS - Adults noted for first time this fall in Brazos River Bottoms of Brazos and Burleson Counties. Averaged 7 per 40 sweeps. (Latham). OKLAHOMA - Adults moved into alfalfa in Stephens County with mating and egg laying begun by first week in November. Eggs ranged 6-8 per square foot in Payne County November 13, averaged 18 per square foot in Stephens County November 17. (Okla. Coop. Sur.). UTAH - Adults heavy in duff near alfalfa fields west of Snowville in Curlew Valley, Box Elder County, week ending November 17. (Knowlton).

A WEEVIL (Pantomorus taeniatulus) - ALABAMA - Adults heavy on leaves of annual Lespedeza and other legumes along roads and fields in Lee County week ending November 17. Larval feeding not noted. (Barwood et al.).

PEA APHID (Acyrthosiphon pisum) - UTAH - Heavy in many Millard County alfalfa fields week ending November 17. (Chapman, Knowlton). ARKANSAS - Light, ranged 10-15 per 100 sweeps, in Washington County alfalfa week ending November 17. (Boyer).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Adults and nymphs continued very heavy in alfalfa in Washita, Custer, and Beckham Counties. (Okla. Coop. Sur.).

SOYBEANS

A CERAMBYCID BEETLE (Dectes texanus texanus) - NORTH CAROLINA - Larval damage economic for first time in Piedmont area of Anson and Cumberland Counties. Checks in southern Anson County revealed general larval infestation in weeds and soybeans. About 20 fields observed with infested soybean plants ranging 1-40 percent. One combined field estimated to have 25 percent lodging. (Hunt, Potter, Jernigan). TENNESSEE - Adults taken on soybeans in Dyer County August 6, 1971, Lauderdale and Shelby Counties August 30, 1971, and Fayette County August 5, 1971. Collected and determined by Patrick. These are new county records. (Gordon, Bruer).

COTTON

TOBACCO BUDWORM (Heliothis virescens) - OKLAHOMA - Larval determinations indicate budworms very common in treated cotton in several western and southern counties during August and September. During September, comprised about 90 percent of the bollworm population in Jackson, Harmon, and Greer Counties, and about 100 percent in Washita County. In Bryan County, about 80 percent of population was budworms by mid-August. (Okla. Coop. Sur.).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - OKLAHOMA - Larvae collected October 9 at Chickasha, Grady County, by D.C. Arnold, D.C. Peters, R.G. Price, and J.H. Young; Caddo and Washita Counties by E. Cleveland; Noble County by J.H. Young; Cotton County by J. Coakley; and Bryan County by B. Hines. These are new county records. (Okla. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Infested 60-80 percent of nuts on untreated trees in orchard in Rogers County week ending November 10. During next 7 days, infestations ranged 20-30 percent on untreated native pecans and 25-45 percent on untreated improved varieties in Noble County orchard. (Okla. Coop. Sur.).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Overwintering larvae heavy in shucks of nuts under all pecan trees examined during first part of November in Lee, Montgomery, Mobile, Baldwin, Monroe, and Wilcox Counties. (McQueen).

CITRUS

AN ARMORED SCALE (*Unaspis citri*) - FLORIDA - Taken November 16 by V.C. Brown on Valencia orange (*Citrus sinensis*) at Immokalee, Collier County. This is a new county record. (Dekle).

ORNAMENTALS

A GEOMETRID MOTH (*Thysanopyga intractata* (Walker)) - VIRGINIA - Larvae heavily damaged American holly in four counties. Northumberland, collected by E.M. Daniel October 23. Determined by D.M. Weisman. Prince George, collected by P.S. Harris November 6; Westmoreland collected by N.P. Pfucha November 14; Hanover, collected by C.W. Saunders November 11. All determined by W.A. Allen. These are new county records. (Allen).

A LACE BUG (*Stephanitis takeyai*) - PENNSYLVANIA - Adults collected October 12 on *Pieris japonica* in Boalsburg, Centre County, by T. Wolf and F. Dinsmore. Determined by T.J. Henry. This is a new county record. (Kim).

DIASPIDID SCALES - FLORIDA - Adults of *Acutaspis morrisonorum* and *Velataspis dentata* collected on palmetto (*Sabal* sp.) October 24 at Ft. Myers, Lee County, by W.E. Wynn and H.L. Gillis. These are new county records. (Fla. Coop. Sur.).

AN ARMORED SCALE (*Phenacaspis cockerelli*) - FLORIDA - All stages caused severe damage to leaves of *Magnolia grandifolora* at Tampa, Hillsborough County, with 99 percent of 100 sampled plants showing damage. (Baker, Lowery).

MEALYBUGS (*Geococcus coffeae*) - FLORIDA - This species and *Phenacoccus solani* collected on *Sida rhombifolia* and *Schinus terebinthifolius* October 25 at Homestead, Dade County. *G. coffeae* is a new county record. (Fla. Coop. Sur.).

FOREST AND SHADE TREES

WHITE PINE WEEVIL (*Pissodes strobi*) - CALIFORNIA - Collected from Sitka spruce (*Picea sitchensis*) at Fort Dick, Del Norte County, during October 1972 by R.E. Dresser. Determined by T.N. Seeno. Confirmed by R.E. Warner. This is a new State record. (PP).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - VIRGINIA - Unusually severe damage reported to pine plantations and yard trees in Portsmouth area, Nansemond County, during week of November 24. (For. Pest Surv. Rpt.). FLORIDA - Pupae heavy on 132 loblolly pine trees, *Pinus taeda*, at Gainesville, Alachua County, November 10. (O'Steen).

ORANGESTRIPED OAKWORM (*Anisota senatoria*) - NEW JERSEY - Larvae completely defoliated several thousand acres of oaks in southern Ocean County. Present each summer in small scattered spots, this is largest single infestation ever noted in State. (McNally, Oct.).

A GEOMETRID MOTH (*Lambdina pellucidaria*) - NEW JERSEY - Larvae heavily defoliated about 5,000 acres of pitch pine forest in southern area during October. This pest rarely causes such extensive damage in State. (McNally).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MINNESOTA - Egg mass surveys completed in Koochiching, northern Itasca, and northern St. Louis Counties. Number of egg masses per sample and area of infestation considerably reduced from past years. (Minn. Pest Rpt.).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 4,948 confirmed cases reported in continental U.S. during period October 29 to November 18 as follows: Texas 4,817; Arizona 108; New Mexico 15; California 4; Oklahoma 3; Kansas 1. Special surveillance operations around Dermopolis, Alabama, and Radium Springs, Georgia, have been discontinued with 32,888 and 25,027 head of cattle inspected respectively. Number of sterile flies released in U.S. this period totaled 470,230,700 as follows: Texas 379,658,800; Arizona 53,635,000; Florida 12,680,000; New Mexico 2,872,500; California 1,720,000; Georgia 1,000,000; Louisiana 664,400. Total of 1,398 cases reported in Mexico this period. Total of 90,591,800 sterile flies released in Mexico. (Anim. Health).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Adults averaged less than 100 per head on cattle in Oktibbeha County week ending November 10. Counts decreased week of November 17; adults averaged less than 25 per head of 30 mixed cattle. (Robinson).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Packing plants in several areas of State reported damage in carcasses much heavier than at this time in 1971. One lot of cattle averaged 85 percent infested. Grubs light on cattle in Comanche County. (Okla. Coop. Sur., Nov. 17).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - PENNSYLVANIA - Counts of 200 mites per bird seen on 6,000 layers in Bonneauville, Adams County; 10 percent loss in production. (Walker).

EAR TICK (Otobius megnini) - OKLAHOMA - Still heavy on cattle in Comanche County, moderate in Johnston County week ending November 17. (Okla. Coop. Sur.).

MOSQUITOES - OKLAHOMA - Adults, mainly Culex tarsalis, continued common and annoying in Stillwater area, Payne County, week ending November 11, despite cool weather previous 14 days. (Okla. Coop. Sur.).

DOUGLAS FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - OREGON - Allergic reactions to larval hairs reported by 80-100 loggers involved in salvage operations in eastern part of State. Symptoms include eczema and difficulty in breathing. (Penrose).

HOUSEHOLDS AND STRUCTURES

REDSHOULDERED HAM BEETLE (Necrobia ruficollis) - NEW HAMPSHIRE - Thousands of adults and larvae infesting tannery at Lebanon, Grafton County. (Pestana).

STORED PRODUCTS

NAVEL ORANGEWORM (*Paramyelois transitella*) - OREGON - Larvae infested 3,400 pounds of walnuts shipped from out of State to Medford. Shipment sampled week ending November 24; 28-60 percent of nuts affected. (Summers).

INDIAN MEAL MOTH (*Plodia interpunctella*) - FLORIDA - Larvae common in shelled corn, hundreds of adults on wall of corn crib, at Laurel Hill, Okalossa County. (Carroll, Nov. 16).

RED-HORNED GRAIN BEETLE (*Platydema ruficorne*) - NEBRASKA - Damaged stored ear corn near Bruno, Butler County. Determined by T.J. Spilman. This is a new county record. (Keith, Nov. 15).

RICE WEEVIL (*Sitophilus oryzae*) - OKLAHOMA - Heavy in farm stored wheat in Washita County. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

A FLEA BEETLE (*Longitarsus jacobaeae*) - WASHINGTON - About 500 adults released on tansy ragwort November 9 near Battle Ground, Clark County. (Shanks). OREGON - Released 500 adults on tansy ragwort rosettes on State land in western Marion County, November 9. (Westcott, Penrose).

A SAGE WEEVIL (*Phrydiuchus tau*) - OREGON - Total of 448 adults from Yugoslavia released on Mediterranean sage, *Salvia aethiops*, in Lakeview area, Lake County, November 2, 1972. (Andres). Few live adults observed in July 1972 at two 1971 release sites south and west of Lakeview, indicating successful completion of one life cycle. (Penrose).

A TACHINA FLY (*Spathimeigenia spinigera*) - OKLAHOMA - One specimen reared from 30 cocoons of *Neodiprion excitans* (a conifer sawfly) collected in Haskell County March 7, 1972. *S. spinigera* determined by C.W. Sabrosky. (Okla. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BEET LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Total of 94,753 acres of beet leafhopper infested Russian thistle stands in San Joaquin Valley treated October 26. Recent surveys showed much better kill this year than in fall 1971. Delayed starting date resulted in more uniform population control; 72-hour kill checks revealed almost total control in many areas. (Cal. Coop. Rpt.).

EUROPEAN CRANE FLY (*Tipula paludosa*) - WASHINGTON - One adult male collected at golf course near Retnon, King County, September 7, 1972, by L. Campbell. Determined by W.J. Turner. Confirmed by G.W. Byers. This is a new county record and most southern collection of this pest in State. (Campbell, Turner).

IMPORTED FIRE ANT (*Solenopsis* sp.) - TENNESSEE - All surveys to date in 1972 have been negative. (Gordon et al.).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Nonsterile moths still trapped in sex lure traps baited with hexalure during week ending November 17. No larvae detected. Only single males trapped with total of 34 for San Joaquin Valley this season. Sterile moth releases total 95,600,000. (Cal. Coop. Rpt.). ARIZONA - Ranged 0-6 per bale in Cochise County week ending November 24. (Kozloski). NEW MEXICO - Infestations remained generally heavy in late bolls still in cotton fields in Dona Ana County week ending November 10. (N.M. Coop. Rpt.). Lint cleaner inspections during week of November 17 in Chaves and Lea Counties revealed few larvae. Inspections in southern Eddy County showed much heavier populations; lint cleaner glasses nearly obscured by larvae. (Perry).

WOOLLY WHITEFLY (*Aleurothrixus floccosus*) - CALIFORNIA - Heavy populations on citrus trees widespread in Carlsbad, San Diego County, week ending November 17. Infestation apparently existed at undetected low level until population explosion this year with climatic conditions exceptionally favorable for many varieties. Each infested property received 25 parasites as infestation detected. (Cal. Coop. Rpt.).

DETECTION

New State Records - A CALLIPHORID FLY (*Protocalliphora hirudo*) - VIRGINIA - Pupae taken subcutaneously from head of house wren August 22, 1972, in Roanoke County. Collected by A.O. English. Determined by C.W. Sabrosky. (Allen). WHITE PINE WEEVIL (*Pissodes strobi*) - CALIFORNIA - Del Norte County. (p. 763).

New County Records - AN ARMORED SCALE (*Unaspis citri*) FLORIDA - Collier (p. 763). A CERAMBYCID BEETLE (*Dectes texanus texanus*) TENNESSEE - Dyer, Lauderdale, Shelby, Fayette (p. 762). COTTON LEAFPERFORATOR (*Bucculatrix thurberiella*) OKLAHOMA - Grady, Caddo Washita, Noble, Cotton, Bryan (p. 762). RED-HORNED GRAIN BEETLE (*Platydema ruficorne*) NEBRASKA - Butler (p. 765). DIASPIDID SCALES - *Acutaspis morrisonorum*, *Velataspis dentata* - FLORIDA - Lee (p. 763). EUROPEAN CRANE FLY (*Tipula paludosa*) WASHINGTON - King (p. 763). A GEOMETRID MOTH (*Thysanopyga intractata*) VIRGINIA - Northumberland, Prince George, Westmoreland, Hanover (p. 763). A LACE BUG (*Stephanitis takeyai*) PENNSYLVANIA - Centre (p. 763). A MEALYBUG (*Geococcus coffeae*) FLORIDA - Dade (p. 763).

CORRECTIONS

CEIR 22(44):740 - HOUSEHOLDS AND STRUCTURES: "A DERMESTID BEETLE (Anthrenus coloratus) NORTH CAROLINA ... O.L. Stephan ..." should read "... *D*. L. Stephan ..." (Hunt).

HAWAII INSECT REPORT

Corn - CORN EARWORM (*Heliothis zea*) heavy in 0.5 acre corn at Pupukea, Oahu; 95 percent of nearly mature ears with one or more young larvae in silks or ear tips.

General Vegetables - PEPPER WEEVIL (*Anthonomus eugenii*) heavy in 0.25 acre of sweet peppers at Hawaii Kai, Oahu; about 40 percent of fruit infested with one or more larvae or adults. (Kawamura). TOMATO PINWORM (*Keiferia lycopersicella*) moderate and light on foliage in yard plantings of potato and eggplant, respectively, at Kula, Maui. Larval parasitism by a braconid (*Apanteles scutellaris*) heavy in nearby tomato planting. (Miyahira, Kawamura). Larvae of LEAFMINER FLIES (*Liriomyza* spp.) and BEET ARMYWORM (*Spodoptera exigua*) moderate in yard planting of green onions at Manoa, Oahu; about 85 percent of plants affected. Both species moderate to heavy in commercial plantings at Waianae, Oahu. (Otsuka, Yamamoto).

Fruits and Nuts - Larval damage by a NOCTUID MOTH (*Phlegetonia delatrix*) heavy on about 75 percent of roadside Java plum trees at Hana, Maui; 75 percent of young terminal leaves damaged. (Ah Sam).

Forest and Shade Trees - EURASIAN PINE APHID (*Pinus pini*) surveys during October concentrated in Koloa district, Kauai, including Omao and Lawai. *Pinus* plants examined mainly potted bonsai but also included ornamental pines in ground. All results negative and appears increasingly doubtful that this pest is established on Garden Isle. (For last report on this pest see CEIR Vol. 22 No. 43:727). (Kashiwai).

Beneficial Insects - *Melanagromyza phaseoli* (bean fly) infesting cow pea and snap bean petioles on Kauai during October, 75-100 percent parasitized by BRACONIDS (*Opius importatus* and *O. phaseoli*). (Sugawa). Eggs of a TACHINA FLY (*Trichopoda pennipes pilipes*) present on 8 of 9 adults of *Nezara viridula* (southern green stink bug) collected in fallow corn field at Pupukea, Oahu. This fly purposely introduced from Antigua and Montserrat, British West Indies, and released in April 1962. Ninety-five adults of a CHAMAEMYIID FLY (Leucopis nigraluna), larvae of which are predators of nymphs and adults of *Pineus pini* (Eurasian pine aphid), were released at Waikii, Hawaii. About 500 adults have been released since the biological control project was initiated in March 1972. No recoveries have been made by November 17. (See Eurasian pine aphid, above). (Kashiwai). LANTANA GALL FLY (*Eutreta xanthochaeta*) caused heavy galling of lantana plants at Koaia Sanctuary, Kawaihae Uka, Hawaii. Heavily affected branches averaged one gall per inch. (Matayoshi).

General Pests - CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) very heavy on 50 percent of papaya trees in yard plantings at Lahaina and Kahului, Maui; heavy on plumeria at Lahaina and 3 acres of snap beans at Waianae, Oahu. (Miyahira, Kawamura). GIANT AFRICAN SNAIL (*Achatina fulica*) activity light on Kauai during October; 64 snails collected at Poipu, none at Wahiawa. Baiting limited to areas of snail activity at Poipu; appears that snails remained in aestivation during this dry month. (Sugawa). NARROW WINGED KATYDID (*Elimaea punctifera*) feeding damage severe to greenhouse orchid and chrysanthemum blossoms at Kona, Hawaii. Similar activity noted on young coffee terminals at Kainaliu, Hawaii. (Matayoshi).

Weather of the week continued from page 760.

Philadelphia, Pennsylvania, also received more rain this month than in any previous November. A storm developed early Monday in the Southwest, crossed the central and southern Rocky Mountains and dumped several inches of snow on the eastern slopes of the Rockies and the western edge of the central Great Plains. One of the heaviest amounts, 7 inches, fell at Dalhart in the Texas Panhandle and at Gage in western Oklahoma. Freezing rain accompanied snow over a large area and some roads became dangerous for motorists. Snow began falling late Tuesday over a wide area from the Great Lakes to Tennessee and spread eastward over the northern Appalachians. A large storm caused rain over the South late in the week and a variety of precipitation from the Mississippi River to the Atlantic Ocean over the weekend. Weekend precipitation included wet snow from the upper and middle Mississippi River Valley to the Appalachians and thunderstorms over the South. A storm moving up the Atlantic coast caused widespread rain along the Atlantic seaboard. Wet snow and mixtures of snow and rain which fell in some areas, made highway travel risky for many motorists who were returning after being away from home for Thanksgiving.

TEMPERATURE: Southern Florida basked in summer weather. The temperature of Fort Lauderdale climbed to 88 degrees Monday afternoon, November 20. Winter temperatures prevailed over most of the Nation. Freezing weather occurred several mornings as far south as the Mexican border. Subzero temperatures were recorded at numerous stations, in Wyoming and the Colorado Rockies Wednesday morning. The mercury at Rapid City, South Dakota, did not get above 25 degrees Monday afternoon and plunged to 10 degrees Wednesday morning. Tuesday was the eleventh consecutive day the temperature at Rapid City has remained below 32 degrees in November since records began in 1888. The afternoon maximums over the Texas Panhandle Tuesday were 20 to 30 degrees colder than normal for late November. Amarillo warmed to only 26 degrees in the heat of the day Tuesday. Cold weather spread over almost the entire Nation. Temperatures in the low 40's were common along the gulf coast Wednesday morning when Mobile, Alabama, registered 42 degrees. The weekend brought warmer weather to much of the West but only slight warming in the East. Temperatures averaged warmer than normal from Washington and Oregon to Wisconsin but cooler than normal over most of the rest of the Nation. Most of the area from Kansas to Texas and eastward to the Atlantic coast averaged 6 to 10 degrees colder than normal.

MEDITERRANEAN FRUIT FLY
Ceratitis capitata (Wiedemann)

Selected References
1950-1955

Copies of this bibliography are available from Pest Survey and Technical Support Staff.

Ackermann, E. 1951. Erfahrungen über die Mittelmeer-fruchtfliege (Ceratitis capitata Wied.) bei citruseinfuhren. Pflanzenschutz 3(4):78-80.

Araya, F. 1954. Un arácnido predator de las moscas de fruta. Posible utilidad para la citricultura. Cien. e Invest. 10(6): 254-260.

Avidov, Z. 1950. Occurrence of Mediterranean fruit fly in a plum orchard at Mikveh-Israel (1945-1949). Jewish Agency Palestine, Agr. Res. Sta. 1:233-244. In He. Abridged Engl. trans. pp. 51-54.

Avidov, Z. and Swirski, E. 1952. Laboratory tests on the effect of chlorinated hydrocarbon compounds on the Mediterranean fruit fly. Israel Agr. Res. Sta. Ktavim 2/3:191-197. In He. English translation pp. 53-56.

Baas, J. 1955. Die Mittelmerrfruchtfliege Ceratitis capitata Wied. in Mitteleuropa. Gartenbauwissenschaft 19(3):340-365.

Baas, J. 1955. Die Mittelmeer-fruchtfliege in Frankfurt am Main. Nat. u. Volk 85(3):65-70.

Baggiolini, M. 1953. La lutte contre la cératite par piégeage à l'aide de gobe-mouches. Rev. Romande d'Agr. de Viticult. et d'Arboricult 9(5):43-44.

Balachowsky, A. 1950. La mouche des fruits (Ceratitis capitata Wied.) est-elle originaire de l'Afrique tropicale? Fruits d'Outre Mer 5(9):319-324.

Balachowsky, M. A. 1950. Sur l'origine de la mouche des fruits (Ceratitis capitata Wied). Acad. d'Agr. de France Compt. Rend. 36(9):359-363.

Balock, J. W. 1951. Ethylene dibromide for destroying fruit fly infestations in fruits and vegetables. Science 114(2953):122.

Berville, P. 1953. La mouche des fruits (Ceratitis capitata). Phytoma (n.s.) 51(6):5-7.

Bess, H. A. 1952. Fighting the fruit flies. Hawaii Farm Sci. 1(1):7-8.

Bess, H. A. 1953. Status of Ceratitis capitata in Hawaii following the introduction of Dacus dorsalis and its parasites. Hawaii Ent. Soc. Proc. 15(1):221-234.

Besson, J. 1950. La mouche des fruits (Ceratitis capitata Wieds). Soc. d'Hort. de la Haute-Garonne. Ann. Ser. 5, 15:198-203.

Bohm, H. 1951. Ein neuer fruchtschädling! Pflanzenarzt 4(10):3-4.

Bohm, H. 1954. Die Mittelmeerfruchtfliege stellt sich vor. Bundesanst. f. Pflanzenschutz 7(12):20-21.

Boselli, F. 1952. Experiments on use of DDT against the Mediterranean fruit fly in Sardinia in 1951. Ann. della Sper. Agr. (n.s.) 6(4):1011-1020. In Ital., Engl. Sum.

Boselli, F. 1954. Results of experiments for the control of the Mediterranean fruit fly in Sardinia in 1952. Ann. della Sper. Agr. (n.s.) 8(1):239-270. In Ital., Engl. Sum.

Cañizo, J. Del. 1954. La mosca de las frutas. Alcor 74:18-22.

Costantino, G. 1951. Control of the fruit fly. Agr. Ital. 2(8): 215-219. In Ital.

Costantino, G. 1954. I nuovi metodi di lotta artificiale contro la mosca della frutta (Ceratitis capitata, Wied.). Osserv. Region. di Fitopathol. per la Calabria Cir. 10. 3 pp. New methods of artificial control of the fruit fly.

Cottier, W. 1952. The cold sterilization of oranges from South Africa. New Zeal. Sci. Rev. 10(7):99.

Dalmeyer, W. H. M. 1952. Results obtained with aldrin and dieldrin against the Mediterranean fruit fly (Ceratitis capitata Wied) in peach orchards in France. Cong. Internatl. de Phytopharm. 3(2):267-274.

Delanoue, P. 1951. Encore la ceratite! Feuille d'Inform. Vitic. et Arbor. de Tunisie 24:8-18.

Delanoue, P. and Soures, B. 1953. Contribution a l'etude biologique de la mouche Mediterraneenne des fruits (Ceratitis capitata) Wied. Acad. d'Agr. de France Compt. Rend. 39(2): 63-66.

Delmas, H. G. 1952. Essais toxicologiques préliminaires sur Ceratitis capitata Wied. Cong. Internatl. de Phytopharm 3(2):289-299.

Delmas, H. G. 1953. Essai de lutte chimique contre Ceratitis capitata Wied. Acad. d'Agr. de France Compt. Rend. 39(7): 394-397.

Delmas, H. G. 1954. Quelques problèmes pratiques soulevés par l'expérimentation de traitements contre Ceratitis capitata (Wied.) en Roussillon. Fruits 9(10):436-442.

Delmas, H. G. and Thermes, R. 1963. Essais de destruction de Ceratitis capitata (Wied.) pendant sa vie hypogée. Acad. d'Agr. de France Compt. Rend. 39(4):222-226.

Delmas, H. G. and Thermes, R. 1953. Sur la profondeur de pupaison de *Ceratitis capitata* Wied. Rev. de Path. Vég. et d'Ent. Agr. de France 32(1):44-49.

Ebeling, W. 1953. Laboratory experiments on the control of three species of fruit flies (Tephritidae). Hilgardia 21(17):515-562.

Féron, M. 1952. Observation sur le parasitisme de *Ceratitis capitata* Wied, dans le sous marocain. Rev. de Path. Vég. et d'Ent. Agr. de France 31(2):99-102.

Follin, C. 1955. Skadegörare av internationell betydelse medelhavsfruktflugan (*Ceratitis capitata*). Sweden Stat. Vaxtskyddsanstalt Vastskyddsnotiser 19(4):60-66.

Gast, A. and Muller, G. 1954. Beobachtungen uber das auftreten der Mittelmeerfruchtfliege (*Ceratitis capitata* Wied.) in Basel. Schweiz. Z. f. Obst- u. Weinbau. 63:202-206.

Geier, P. and Baggiolini, M. 1953. Observations sur la mouche Mediterraneenne, *Ceratitis capitata* Wied., en Suisse. Schweiz. Ent. Gesell. Mitt. 26(1):46.

Genduso, P. 1954/1955. Prove di lotta contro la *Ceratitis capitata* Wied in provincia di Palermo a mezzo di derivati clorurati di sintesi ed esteri fosforici. Palermo Univ. Ist. di Ent. Agr. Bol. 1:75-85.

Ghesquière, J. 1950. Un parasite de la *Ceratitis capitata* Wied. en France. Soc. Ent. de France Bul. 55(5):66-68.

Giannotti, O. and Lepage, H. S. 1951. Preliminary note on the effect of some modern insecticides on two pests of peach, *Ceratitis capitata* and *Grapholitha molesta*. Biológico 17(9):166-168. In Por.

Gomes, J. 1952. Sprays for fruit pests. Lav. e Criacao 7(44):37. In Por.

Grison, P., Feron, M., and Sacantanis, K. 1950. Development de la mouche des fruits (*Ceratitis capitata* Wied.) en milieu nutritif synthetique. Paris. Acad. des Sci. Compt. Rend. 231(19):996-998.

Juarez Montegrifo, F. 1952. Defensa de la naranja temprana contra la "mosca." Cám. Ofic. Sind. Agr. de la Prov. de Murcia. Bul. 111:3-4.

Laurence, B. R. 1955. *Ceratitis capitata* Wied. (Trypetidae) in south London. Ent. Rec. and J. Variation 67(2):70-71.

Leonardi, C. 1954. The fruit fly *Ceratitis capitata* Wied is no longer fearsome. Agr. Napoletana 21(5/6):12-17. In Ital.

Mariconi, F. A. M. and Iba, S. 1955. The Mediterranean fruit fly. Biológico 21(2):17-32. In Por.

Martelli, G. M. 1950. Tentative trials of olive fly control by chlorinated organic compounds dusted on the soil or incorporated in it. Ann. della Sper. Agr. (n.s.) 4(1):153-164. In Ital., Engl. Sum.

Martin, H. 1950. Note préliminaire sur le comportement de *Ceratitis capitata* Wied dans la région algeroise (Dipt. Trypetid.). Schweiz. Ent. Gesell. Mitt. 23(2):120-124.

Martin, H. 1952. Essais de lutte contre... la mouche Mediterranéenne des fruits (*Ceratitis capitata* Wied) sur peches tardives en provence. Phytoma 36(5):20-21.

Martin, H. 1953. Contribution a l'etude de la mouche des fruits (*Ceratitis capitata* Wied) dans la region d'Alger 1949-1951. Rev. de Path. Veg. et d'Ent. Agr. de France 32(4):209-246. Engl. Sum.

Martin, H. 1953. Observations on the Mediterranean fruit fly on citrus in Tripolitania (Libya) in 1952/53. FAO Plant Protect. Bul. 1(9):132-136.

Martino, E. Di. 1952. Another test on Mediterranean fruit fly control. Ann. della Sper. Agr. (n.s.) 6(1):5-14. In Ital., Engl. Sum.

Martino, E. Di. 1952. Comparative tests of the attractiveness of beet and carob molasses. Ann. della Sper. Agr. (n.s.) 6(4):933-940. In Ital., Engl. Sum.
As bait for *Ceratitis capitata*

Mellini, E. 1952. The fruit fly (*Ceratitis capitata* Wied.). Informatore Fitopatol. 2(5):4-5. In Ital.

Minatta, M. J. 1950. "Mosca de las frutas", *Ceratitis capitata* (Wiedemann) su biologia y control. IDIA; Inform. de Invest. Agr. 3(33/34):32-33.

Mitjans Escala, J. 1952. Experiencias en la lucha contra la "*Ceratitis capitata*" mosca de la fruta, en Begas (III zone agricola). Cam. Ofic. Sind. Agr. de Barcelona Bul. 7:139-140.

Nasser, A. A. 1954. Notes on some insect pests in Lebanon. FAO Plant Protect. Bul. 2(9):138-139.

New South Wales Department of Agriculture. Entomological Branch. 1954. Fruit flies. New South Wales Dept. Agr. Insect Pest Leaflet 11. 8 pp.

Poisson, R. and Barbotin, F. 1950. La mouche des fruits: *Ceratitis capitata* Wied dans l'Ouest de la France. Feuille des Nat. (n.s.) 5(7/8):79.

Puebla, A. De La. 1950. Las frutas citricas y sus males. I-II. Rev. Ganad. 10(5):26; (6):34.

Quere, L. 1950. La mouche des fruits (*Ceratitis capitata*). Vaucluse Agr. 6(115):1. II. - Lutte contre la mouche des fruits 6(117):1.

Riveros, J. E. 1950. Observaciones sobre la mosca de la fruta. La Chacra 21(241):36-37.

Rivnai, I. 1954. Measures for the control of the fruit fly. Hassadeh 35:99-101. In He.

Rivnay, E. 1950. The Mediterranean fruit fly in Israel. Bul. Ent. Res. 41(2):321-341.

Rivnay, E. 1954. The Mediterranean fruit fly, Ceratitis capitata Wied. Studies on its toxicants, mass migration and control in Israel. Israel Agr. Res. Sta. Ktavim 4(4):3-38.

Rivnay, J. and Safran, B. 1955. War on fruit-fly in peaches in the Negev - successes and failures. Hassadeh 35(8):627-628. In He.

Ruiz Castro, M. 1951. Ampelophages des racines et des souches de vigne, etudies dans le vignoble espagnol. Off. Internatl. du Vin. Bul. 24(244):67-79.

Ryan, F. E. 1950. Trials with new insecticides in fruit fly control. West. Austral. Dept. Agr. J. Ser. 2, 27(2):226-238.

Sacantanis, M. K. 1952. Etudes et observations sur les substances attractives pour Ceratitis capitata. L'Acad. d'Agr. de France Compt. Rend. 38(1):53-55.

Sala, R. 1953. La lucha contra la mosca de la fruta. Cult. Mod. 36(5):178-179.

Seara, C. 1950. Fruit flies. How to control them. Rev. Agron. 14(157/159):54-55 (Porto Alegre). In Por.

Smith, H. S. 1950. Organization and objectives of the fruit fly work in Hawaii. Calif. Citrog. 35(3):99, 128-129.

Steiner, L. F. 1952. Fruit fly control in Hawaii with poison-bait sprays containing protein hydrolysates. J. Econ. Ent. 45(5): 838-843.

Steiner, L. F. 1954. Fruit fly control with poisoned-bait sprays in Hawaii. U.S. Agr. Res. Serv. ARS-33-3. 4 pp.

Tirelli, M. 1951. New method for the control of the cherry fly (Rhagoletis cerasi L.) and the fruit fly (Ceratitis capitata Wied.). Riv. Fitosanit. 2(5):9. In Ital.

Turica, A. 1953. Ciclo biologico de Ceratitis capitata Wied. en el Delta del Parana. Argentina Dir. Gen. de Invest. Agr. IDIA 63:1-3.

Valent, A. 1951. Un fleau des vergers la mouche Mediterraneenne des fruits. Bul. des Engrais 330:71-73.

Varela, A. 1952. La mosca oriental de la fruta es un problema internacional. Fitofilo 6(6):5-10.

Vergani, A. R. 1950. Ceratitis capitata (Wied.), "mosca del Mediterráneo." IDIA; Inform. de Invest. Agr. 3(33/34):33-34.

Vieira, R. 1952. Packing of fruit as preventive in the control of "fruit fly." Frutas da Madeira 12(1):216-217. In Por.

Zocchi, R. 1954. Control of Ceratitis capitata Wied. and Anthonomus pomorum L. Florence Sta. di Ent. Agr. Nota Prat. 26. 14 pp. In Ital.

Prepared by Pest Survey and
Technical Support Staff

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
22(46-48):769-774, 1972

U.S. DEPARTMENT OF AGRICULTURE
HYATTSVILLE, MARYLAND 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101

U.S.MAIL